In the Claims

- 1. (Currently Amended) An A naphthalene dioxygenase complex NDO or naphthalene dioxygenase NDO related complex comprising a plurality of polypeptides, wherein the complex or the related complex catalyzes oxidation of an aromatic substrate and comprises at least one alpha-subunit polypeptide that comprises: 1) a substituted amino acid at a the position corresponding to position 352 in NDO an alpha-subunit having SEQ ID NO: 26, 2) a substituted amino acid at a the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 in NDO an alpha-subunit having SEQ ID NO: 26, or 3) a substituted amino acid at the position corresponding to position 352 in NDO, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 in NDO an alpha-subunit having SEQ ID NO: 26, or 3) a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 in NDO an alpha-subunit having SEQ ID NO: 26, or 4) a catalytically active fragment of any of 1-4 that catalyzes oxidation of an aromatic substrate.
- 2. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> complex of claim 1 having an alpha-subunit that comprises an amino acid other than phenylalanine at position 352 <u>of SEQ ID NO: 26</u>, or a <u>eatalytically active</u> fragment thereof <u>that catalyzes oxidation of an aromatic substrate</u>.
- 3. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at position 201, 202, 260, 316, 351, 352, 358, 362, or 366 of SEQ ID NO: 26, or a catalytically active fragment thereof <u>that catalyzes</u> oxidation of an aromatic substrate.
- 4. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 in NDO, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a eatalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.



- 5. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 of SEQ ID NO: 26 in NDO; or a catalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.
- 6. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 352, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a eatalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.
- 7. (Currently Amended) The <u>naphthalene dioxygenase NDO</u> related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 in NDO, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a catalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.



- 8.(Currently Amended) The <u>naphthalene dioxygenase</u> complex of claim 2 wherein the amino acid at position 352 is a naturally occurring amino acid.
- 9. (Currently Amended) The <u>naphthalene dioxygenase</u> complex of claim 2 wherein the alphasubunit has or comprises SEQ ID NO:2, 32, 33, 34, 35, or 36.
- 10. (Currently Amended) The <u>naphthalene dioxygenase</u> complex of claim 2 wherein the alphasubunit has or comprises SEQ ID NO:2.
- 11. (Currently Amended) The <u>naphthalene dioxygenase related</u> complex of claim 5 wherein the amino acid at the position corresponding to position 352 in NDO has been substituted with a naturally occurring amino acid.

12. (Currently Amended) The <u>naphthalene dioxygenase related</u> complex of claim 5 wherein the amino acid at the position corresponding to position 352 in NDO has been substituted with valine.

13.(Currently Amended) The <u>naphthalene dioxygenase related</u> complex of claim 5 wherein the alpha-subunit has or comprises any one of SEQ ID No: 2 No's: 14 to 24.

14-29. (Previously Cancelled)

30. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises alanine, glutamine, or serine at position 201.

31. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises leucine or valine at position 202.

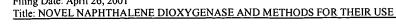
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- 32. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises alanine, leucine, or asparagine at position 260.
- 33. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 316.
- 34. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises asparagine, arginine, or serine at position 351.
- 35. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 358.
- 36. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 362.

Page 7 Dkt: 875.006US2

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AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

37. (Currently Amended) The <u>naphthalene dioxygenase</u> NDO complex of claim 3 having an alpha-subunit that comprises tryptophane at position 366.

38.(Withdrawn) A oligonucleotide comprising any one of SEQ ID No's 37 and 40-55.